



Linear Motion. Optimized.™

Thomson Industries Steel Sleeve Linear Ball Bushings For Die Movement Applications



- Designed specifically for die movement applications
- The all-steel design makes this ball bushing bearing suitable for high temperature applications.
- For use with D class Shafting.
- Furnished with clamps and socket heads screws

PART NUMBER	DS16	DS20	DS24	DS32
Diameter	1 inch	1.25 inch	1.5 inch	2 inch
Dynamic Load Capacity	350 lbf	520 lbf	770 lbf	1,100 lbf
Overall Length	4.11 in	4.86 in	5.61 in	6.36 in
OD	0.94 in	1.19 in	1.44 in	1.94 in
Mating Shaft (See Back)	1 D RL	1 1/4 D RL	1 1/2 D RL	2 D RL

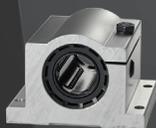
DIMENSIONS

		[Dimension] = Value
DS16		[B] = 48.514 mm / 1.9100 in
		[C] = 104.394 mm / 4.1100 in
		[d] = 25.400 mm / 1.0000 in
		[D] = 23.876 mm / 0.9400 in
DS20		[d] Shaft, Nominal Diameter = 1.5 in
		[B] = 2.72 in
		[C] = 4.17 in
		[D] Pilot Diameter = 2.0003 / 2.0007 in
DS24		[d] Shaft, Nominal Diameter = 1.5 in
		[B] = 2.72 in
		[C] = 4.17 in
		[D] Pilot Diameter = 2.0003 / 2.0007 in
DS32		[d] Shaft, Nominal Diameter = 2 in
		[B] = 3.53 in
		[C] = 4.42 in
		[D] Pilot Diameter = 2.5003 / 2.5007 in



Thomson Die Set Ball Bushing Bearings are designed to fit the mounting holes of the punch holder in standard dies. When replacing high-friction, plain bearings in standard dies, the result is less machine downtime and increased efficiency. With steady state speeds up to 10 ft./s, the Die Set bearing will provide faster cycle times with improvements in production rates realized immediately. Matched precision ground 60 Case® LinearRace® allows for a close fit-up between the shaft and the LinearRace shafting and bearing, providing critical die alignment. When normal machine service requires bearing replacement, the Die Set bearing can be removed by simply unbolting the toe clamps.

Ask us about other
Thomson Industries
products we offer.



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Thomson Industries 60 Case 1, Class D Carbon Steel Round Shaft



- Available from stock and cut to length in most material types and options. Contact Flotronics Automation for more information.
- Centerless ground for an industry leading cataloged surface finish of 8 Ra max.
- Roundness within 0.000080" for Class L, S, D, M and 0.000050" for Class N.
- Using 60 Case® LinearRace shafting with Thomson Ball Bushing bearings ensures optimal bearing performance and travel life.

PART NUMBER	1 D RL	1 1/4 D RL	1 1/2 D RL	2 D RL
Diameter	1 inch	1.25 inch	1.5 inch	2 inch
Material, Shaft	1566 Carbon Steel			
Surface Finish	8 Ra microinch Max			
Tolerance Class / Hardness	Class D / 60 Rockwell C Min.			
Straightness	0.001 in per Foot Cumulative (.002 in TIR)			
Length	5,131 mm / 202 in			
Case Depth, Minimum	2.032 mm / 0.080 in			2.540 mm / 0.100 in
Roundness	0.00203 mm / 0.00008 in			
Taper	0.0025 mm / 0.0001 in			

Please reference the following for extending travel life
or when using non 60 Class D hardness shafting.

Travel Life

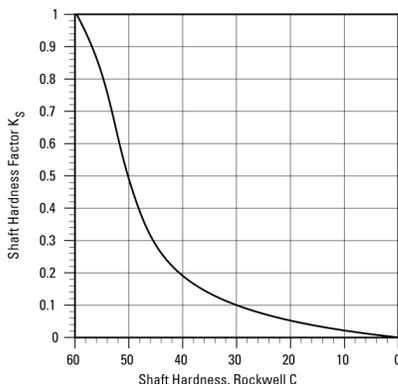
The following formula may be used to determine travel life for bearings with imperial units:

$$L_m = \left(\frac{W}{P} \cdot K_\theta \cdot K_s \right)^3 \cdot 2 \cdot 10^6 \text{ inches}$$

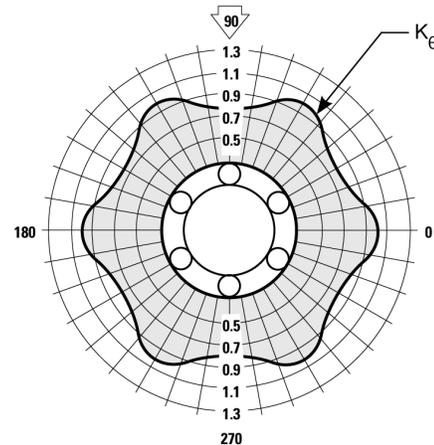
Where: L_m = travel life (in)
 W = dynamic load capacity rating (lbf)
 P = resultant from externally applied loads (lbf)
 K_θ = load correction factor
 K_s = shaft hardness factor

Shaft Hardness factor, K_s

For shafts that do not meet hardness 60 HRC, shaft hardness factor K_s must be applied.



Load Correction Factor, K_θ



The actual dynamic load capacity of a Ball Bushing Bearing is determined by the direction of the applied load relative to the bearing circuits. The load correction factor K_θ is found by referring to the polar graph. To determine the actual dynamic load capacity, multiply the proper correction factor (K_θ) by the dynamic load capacity.

Questions?

Contact Flotronics Automation's Helpful Staff.
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 West Michigan: 616-682-7013
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Did you know Flotronics Automation also offers **Self-Synchronizing** Thomson Electric Actuators? [Contact us for a quote or more information.](#)